

EMERGENCY AIRWORTHINESS DIRECTIVE



Aircraft Certification Service
Washington, DC

U.S. Department
of Transportation
**Federal Aviation
Administration**

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DATE: July 2, 2003

AD #: 2003-14-51

Send to all U.S. owners and operators of MD Helicopters, Inc. Model MD900 helicopters.

This superseding Emergency Airworthiness Directive (EAD) is prompted by two instances of failure of a main rotor blade retention bolt (bolt) and subsequent new information as a result of the investigation. The failure of these bolts creates an unsafe condition that, if not corrected, could result in loss of a main rotor blade and subsequent loss of control of the helicopter.

On June 20, 2003, the FAA issued an EAD that contained interim actions until the investigations were complete. That EAD requires certain checks and inspections of bolt, part number 900R3100001-103, and, if necessary, replacing the bolt with an airworthy bolt. That action was prompted by two instances of bolt failure.

After issuing that EAD, investigations indicated that the bolt failures were due to fatigue. Also, MD Helicopters issued Service Bulletin SB900-092 R1, dated June 30, 2003 (SB), which describes procedures for disassembling and inspecting the bolts. After reviewing the SB and the investigation results, the FAA determined that the pilot check and torque inspection could be limited to bolts with 400 or more hours time-in-service (TIS). The FAA also determined that disassembly and a more detailed inspection of the condition of each bolt is necessary.

Since an unsafe condition is likely to exist or develop on other helicopters of the same type design, this EAD requires the following:

- Before further flight, remove, inspect, and reinstall each bolt, unless accomplished previously. If segments do not move freely or a crack is found, replace the bolt with an airworthy bolt before further flight.
- Thereafter, until the terminating action is accomplished, before each start of the engines for each bolt with 400 or more hours TIS, do a visual check. A pilot may perform the visual check.
- If a bolt has shifted upward or if there is no gap between the thrust washer and retainer (the gap indicates that the O ring is intact), before further flight, inspect the bolt.
- At specified intervals, until you accomplish the terminating action, for bolts with 400 or more hours TIS, do a cam lever force inspection on each bolt, without removing the bolt.
- Within 30 days, for bolts with 400 or more hours TIS, disassemble, inspect, and reinstall each airworthy bolt. If a crack, fretting, or corrosion is found, replace the bolt with an airworthy bolt before further flight.

- Before accumulating 400 hours TIS, for each bolt with less than 400 hours TIS, disassemble, inspect, and reinstall each airworthy bolt. If a crack, fretting, or corrosion is found, replace the bolt with an airworthy bolt before further flight.

Doing the required disassembly and inspections of each bolt, P/N 900R3100001-103, constitutes terminating action for the requirements of this AD. The actions must be accomplished in accordance with the service bulletin described previously.

An owner/operator (pilot), holding at least a private pilot certificate, may perform the visual checks required by paragraph (b) of this AD and must enter compliance into the aircraft maintenance records in accordance with 14 CFR sections 43.11 and 91.417(a)(2)(v)). A pilot may perform this check because it is a visual check for a gap or movement of the bolt and can be performed equally well by a pilot or a mechanic.

This rule is issued under 49 U.S.C. Section 44701 pursuant to the authority delegated to me by the Administrator, and is effective immediately upon receipt of this emergency AD.

2003-14-51 MD HELICOPTERS, INC.: Docket No. 2003-SW-33-AD. Supersedes Emergency AD 2003-13-51, Docket No. 2003-SW-27-AD.

Applicability: Model MD900 helicopters, serial number 900-00008 through 900-00114, with main rotor blade retention bolt (bolt), part number 900R3100001-103, installed, certificated in any category.

Compliance: Required as indicated, unless accomplished previously.

To prevent failure of a bolt, loss of a main rotor blade, and subsequent loss of control of the helicopter, accomplish the following:

(a) Before further flight, remove, inspect, and reinstall the bolt in accordance with the Accomplishment Instructions, paragraph 2.B., of MD Helicopters Service Bulletin SB900-092 R1, dated June 30, 2003 (SB). If segments do not move freely or a crack is found, replace the bolt with an airworthy bolt before further flight.

(b) Thereafter, before each start of the engines, for each bolt with 400 or more hours time-in-service (TIS) or if the hours TIS is not available for each bolt, visually check each bolt as follows:

(1) Check that the position of each installed bolt has not shifted upward.

(2) Check for a gap between the thrust washer and retainer.

(3) An owner/operator (pilot), holding at least a private pilot certificate, may perform the visual check required by this paragraph and must enter compliance into the aircraft maintenance records in accordance with 14 CFR sections 43.11 and 91.417(a)(2)(v)).

(c) If a bolt has shifted upward or if there is no gap between the thrust washer and retainer (the gap indicates that the O ring is intact), before further flight, inspect the bolt in accordance with the Accomplishment Instructions, paragraph 2.B., of the SB.

(d) After accomplishing paragraph (a) of this AD, thereafter, at intervals not to exceed 6 hours time-in-service, for bolts with 400 or more hours TIS, do a cam lever force inspection on each bolt, without removing the bolt, in accordance with the Accomplishment Instructions, paragraphs 2.B.(3) and 2.B.(6) of the SB.

(e) Within 30 days, for bolts with 400 or more hours TIS, disassemble, inspect, and reinstall each airworthy bolt in accordance with the Accomplishment Instructions, paragraph 2.C. of the SB, except you are not required to report inspection results to MD Helicopters, Inc. If a crack, fretting, or corrosion is found, replace the bolt with an airworthy bolt before further flight.

(f) Before accumulating 400 hours TIS, for bolts with less than 400 hours TIS, disassemble, inspect, and reinstall each airworthy bolt in accordance with the Accomplishment Instructions, paragraph 2.C. of the SB, except you are not required to report inspection results to MD Helicopters, Inc. If a crack, fretting, or corrosion is found, replace the bolt with an airworthy bolt before further flight.

(g) Accomplishing paragraphs (e) or (f) of this AD constitutes terminating action for all of the requirements of this AD.

(h) To request a different method of compliance or a different compliance time for this AD, follow the procedures in 14 CFR 39.19. Contact the Los Angeles Aircraft Certification Office, FAA, for information about previously approved alternative methods of compliance.

(i) Copies of the applicable service information may be obtained from MD Helicopters Inc., Attn: Customer Support Division, 4555 E. McDowell Rd., Mail Stop M615-GO48, Mesa, Arizona 85215-9734, telephone 1-800-388-3378, fax 480-891-6782, or on the web at www.mdhelicopters.com.

(j) Emergency AD 2003-14-51, issued July 2, 2003, becomes effective upon receipt.

FOR FURTHER INFORMATION CONTACT: Jon Mowery, Aviation Safety Engineer, FAA, Los Angeles Aircraft Certification Office, Airframe Branch, 3960 Paramount Blvd., Lakewood, California 90712, telephone (562) 627-5322, fax (562) 627-5210.

Issued in Fort Worth, Texas, on July 2, 2003.

David A. Downey,
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